

REMARKS

Claims 6-12, 15-23 and 40-46 are pending in the present application. Claims 6, 22 and 23 are amended. Claims 44-46 are new and claims 8, 14, 21 and 24-39 are canceled.

Applicant and the undersigned thank the Examiner for his time and attention given at the interview on March 6, 2002.

The Examiner on page 2, lines 3-4 in the Office Action questions whether JP-U-61-73305 is complete. Applicants submit that JP-U-61-73305 is complete and only has four drawing figures.

35 U.S.C. § 112, Second Paragraph, Rejection

Claims 21-23 and 28-39 have been rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention.

Claims 21 and 28-39 have been canceled and claims 22-23 (now dependent on claim 6, do not reference an "extension line."

Accordingly, this rejection is now moot.

35 U.S.C. § 103(a) Rejection

Claims 6-12, 14-20, 24-31 and 34-39 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over the combined teachings of JA 5-3365 (Fig. 5), JA 6-156049 and Nagao or JA 63-38016. Applicants respectfully traverse.

In claim 6 (as well as the claims dependent therefrom), the cooling heat exchanger having corrugated fins is tilted (inclined) so that condensed water generated on the tubes of the cooling heat

exchanger can be readily moved downwardly along the bottom surface of the cooling heat exchanger by the weight of the condensed water. Therefore, draining performance (discharging performance) of condensed water can be improved, which prevents the condensed water from being directed upwardly (toward the passenger compartment side of the evaporator).

Further, the top end of the air introduction port is positioned higher than the tilted lower end portion of the cooling heat exchanger, and the bottom end of the air introduction port is positioned lower than the tilted upper end portion of the cooling heat exchanger. Accordingly, air blown by the blower does not prevent the movement of condensed water along the bottom surface of the cooling heat exchanger, so that draining performance of the condensed water can be further improved.

In JA 5-3365, there is no description regarding the structure of the cooling heat exchanger (6). That is, a corrugated-fin type cooling heat exchanger is not taught in JA 5-3365. Therefore, there is no motivation for "readily moving condensed water downwardly by the weight of condensed water long the bottom surface of the cooling heat exchanger after condensed water falls to the bottom surface in the cooling heat exchanger."

In JA 5-3365, the top end of the air introduction port is under the tilt lower end portion of the cooling heat exchanger. Therefore, air blown from the blower (2) does not flow along the bottom surface of the cooling heat exchanger. Even if air from the blower flows from a side of the tilted upper end portion toward the tilt lower end portion of the cooling heat exchanger, condensed water moving along the bottom surface of the cooling heat exchanger is forcefully moved upwardly by the air flow from the blower since the top end of the air introduction port is positioned lower than

not in claim 6
Not in claim 40

the tilted lower end portion of the cooling heat exchanger. Accordingly, the disclosed arrangement in JA-3365 does not promote draining performance of the condensed water.

*Spec. w/ heat
at last*

JA 6-156049 is incapable of curing the deficiencies in the primary reference. In JA 6-156049, there is no description regarding the corrugate-fin type of cooling heat exchanger. Further, the blower (18) is disposed under the cooling heat exchanger (28). That is, the blower (18) is not offset to a side of the cooling heat exchanger. There is no positional relationship between the tilted upper end portion and the tilted lower end portion of the cooling heat exchanger, and the top end and the bottom end of the air introduction port, as defined in claim 6.

In Nagao et al. (U.S. Patent No. 4,696,340), there is no description regarding the tilted cooling heat exchanger. The drawings of Nagao et al. only indicate the horizontally-disposed cooling heat exchanger. Therefore, there is no motivation "for moving the condensed water downwardly along the bottom surface of the cooling heat exchanger by the weight after the condensed water falls to the bottom surface in the cooling heat exchanger".

Not
in
cla
6
5.
40

Further, the air conditioner in Nagao et al. is constructed so that air is sucked from both sides of the cooling heat exchanger. Therefore, a downward flow of condensed water is disturbed by air blown from both sides of the cooling heat exchanger, and the draining performance of the condensed water is deteriorated.

First, the blower (4) is disposed above the cooling heat exchanger (5), and the heating heat exchanger is disposed vertically. Therefore, the base arrangement structure of the air conditioner is completely different from that of the present invention.

For example, in JA 63-38016, because the blower (4) is disposed above the cooling heat exchanger (5), the blower (4) sucks air from the lower side of the cooling heat exchanger (5) upwardly.

Claims 21-23, 32 and 33 are rejected under 35 U.S.C. § 103(a) as being unpatentable over the art as applied to claim 6, and further in view of Gebhardt or Brandecker. Reconsideration of this rejection as it may apply to amended claims 22 and 23 is requested.

In Gebhardt et al. (U.S. Patent No. 2,703,223), first, the cooling heat exchanger is a plate-fin type, but is not a corrugated fin type. In addition, there is a description regarding a tilt of a baffle plate (19), but there is no description that the cooling heat exchanger is tilted. When the cooling heat exchanger is viewed from the drawings, the cooling heat exchanger is disposed horizontally. Further, there is no position relationship between the air introduction port and the cooling heat exchanger, defined in each independent claim of the present invention. Accordingly, draining performance is not improved.

Claims 9 and 17 are rejected under 35 U.S.C. § 103(a) as being unpatentable over the prior art as applied to claim 6, and further in view of Gebhardt or Marsteller or Brandecker or Bates or Mullin et al.

In Bates, an engine-cooling system having a blower and a radiator (14) is described. Therefore, air blown into the passenger compartment is not cooled by the radiator (14), and condensed water is not generated on the radiator (14).

Double Patenting Rejection

Claims 6-12 and 14-39 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-7 of U.S. Patent No. 5,755,107 in view of the prior art applied to claims 6-12 and 14-39 of the Office Action. Claims 6-12 and 14-39 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-16 of U.S. Patent No. 6,044,656 in view of the prior art applied to claims 6-12 and 14-39 of the Office Action. Reconsideration of these rejections is respectfully requested as it may apply to the amended and newly added claims.

During the interview, the Examiner directed the Applicants' attention to *In re Goodman*, 11 F.3d 1046, 29 USPQ.2d 2010 (Fed. Cir. 1993). While the *Goodman* decision generally relates to the issue of double patenting, its reasoning is inapposite in the present application since the *Goodman* decision deals with pending claims that are broader in scope than the previously allowed patent. The Federal Circuit determined that the two claims at issue were generic to the species of the invention covered by a claim in the issued patent. In the absence of a terminal disclaimer, the new claims were properly rejected under the Doctrine of Obviousness-Type Double Patenting. Those facts are not relevant here.

The claims at issue in the present application are directed to a combination of elements in which an air introduction port is positioned with respect to the cooling heat exchanger and blower for controlling a flow of air into the chamber which holds the evaporator. While some of the claims of the two patents cited by the Examiner discuss directing air from a blower to the evaporator, there is no discussion of an air introduction port which facilitates and manipulates this air flow. As a

result, Applicants submit the combination of elements cited in the pending amended and newly added claims are not merely an obvious variation over the claims of the patents previously issued. Therefore, a terminal disclaimer is not required. Reconsideration of these rejections is thus respectfully requested.

CONCLUSION

In view of the foregoing, Applicants submit that claims 6-7, 9-12, 15-20, 22-23 and 40-43 are patentable over the relied upon references, and that the application as a whole is in condition for allowance. Early and favorable notice to that effect is respectfully solicited.

In the event that any matters remain at issue in the application, the Examiner is invited to contact the undersigned at (703) 390-3030 in the Northern Virginia area, for the purpose of a telephonic interview.

Attached hereto is a marked-up version of the changes made to the application by this Amendment.

Appl. No. 09/531,531
Atty Docket No. 4041J-000452COD

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 08-0750 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

HARNESS, DICKEY & PIERCE, P.L.C.

By

Terry L. Clark
Reg. No. 32,644

P.O. Box 8910
Reston, VA 20195
(703) 390-3030

TLC/ewd

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS

The claims have been amended as follows:

6. (Thrice Amended) An air conditioner for [an automotive] a vehicle having a passenger compartment, said air conditioner comprising:

 a case forming an air passage through which air is blown into the passenger compartment;

 a blower for blowing air in said case into the passenger compartment;

 a cooling heat exchanger for cooling air blown from said blower, said cooling heat exchanger being disposed in said case to have a lower space in said case under a bottom surface of said cooling heat exchanger to be slightly inclined relative to a horizontal surface by an inclination angle;

 a heating heat exchanger for heating air from said cooling heat exchanger so that the temperature of air to be blow into the passenger compartment is conditioned, said heating heat exchanger being disposed approximately horizontally at an upper side of said cooling heat exchanger; and

 a mode switching member for selectively switching flow direction of the conditioned air blown into the passenger compartment, wherein

 said cooling heat exchanger includes a plurality of tubes through which refrigerant flows, and a plurality of corrugated fins disposed between adjacent said tubes; [and]

said blower is offset from said cooling heat exchanger to a side of said cooling heat exchanger;

said bottom surface of said cooling heat exchanger has a tilted upper end portion and a tilted lower end portion;

said case has a case portion defining an air introduction port from which air blow by said blower is introduced into said lower space, said air introduction port having a top end and a bottom end in a vertical direction; and

said top end of said air introduction port is positioned above said tilted lower end portion of said cooling heat exchanger, and said bottom end of said air introduction port is positioned under said tilted upper end portion of said cooling heat exchanger, in the vertical direction.

22. (Amended) An air conditioner according to claim [21] 6, wherein:

said blower includes a centrifugal fan including a top and a bottom; and

said [downwardly inclined end] tilted lower end portion of said cooling heat exchanger is positioned lower than said top of said centrifugal fan.

23. (Amended) An air conditioner according to claim [21] 6, wherein:

said case includes a scroll casing;

said blower includes a centrifugal fan disposed within said scroll casing; and

said scroll casing has a bell mouth shaped inlet disposed at the top of said scroll casing, from which air is drawn therein.

Appl. No. 09/531,531
Atty Docket No. 4041J-000452COD

Claims 44-46 have been added and claims 8, 14, 21 and 24-39 have been canceled.